



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/585,001

06/29/2006

Toshihiko Tsuji

128591

4937

25944 7590 08/06/2009
OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER

SMYTH, ANDREW P

ART UNIT

PAPER NUMBER

2881

MAIL DATE

DELIVERY MODE

08/06/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/585,001 | TSUJI ET AL. | |
| | Examiner | Art Unit | |
| | ANDREW SMYTH | 2881 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/04/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-15, 17-25, 29 and 30 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 16, 26-28, 31, 33-36, 38 and 39 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 32 and 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/29/2006, 07/31/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Request for Continued Examination (RCE)

1. Claims 1-25 have been amended.
2. Claims 26-39 are new claims.
3. Claims 7-15 and 17-25 were previously allowed in Final Rejection of 11/04/2008. Previously allowed claims 7-15 and 17-25 were amended to replace the word "said" with the word "the". The subject matter of the claims remains unchanged.

Response to Arguments

1. Applicant's arguments with respect to claim 1-6 and 16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

1. Claims 4, 6, 32, and 37 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Concerning claims 4, 6, 32, and 37; the search failed to find the vibration isolation device for supporting the optical member and preventing vibrations from traveling through the device along the optical axis and also a control device for moving the vibration isolation device in the optical axis direction if a detector is triggered.

Allowable Subject Matter

1. Claims 29-30 are allowed.
2. Dependent claims 29-30 are allowable due to dependency upon previously allowed independent claim 7.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 5, 33, 35 recites the limitation "a second vibration isolation device" or "the vibration isolation device" in claim 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1-3, 16, 26-28, 31, 34, 36, and 38-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Kayama et al. (US 2007/0081133).

Regarding claim 1, Kayama et al. teaches an exposure apparatus that has an optical member/ projection unit (figure 1, PU) for transferring a pattern from a mask (figure 1, R) onto a substrate (W); a movable member/XY stage (31) below the optical member/ projection unit , which supports the substrate and moves perpendicularly to the optical axis of the optical member/ projection unit ; a detector (18, 17) , on a periphery of the optical member/ projection unit , for detecting the position of the movable member/XY stage or of the substrate along the optical axis direction; and a device/controller (19, 20) for receiving position information from the detector and controlling the movement of the movable member/XY stage in a direction perpendicular to the optical axis of the optical member/ projection unit [0057; 0077, 0159].

Regarding claim 2, Kayama et al. teaches an elevating device/wafer stage drive (24) for moving the movable member/XY stage in the optical axis direction [0159], wherein the control device (20, 19) controls the elevating device/wafer stage drive based on measurements of the detector to move the movable member/XY stage away from the optical member/ projection unit along the optical axis direction [0050; 0149; 0159].

Regarding claim 3, Kayama et al. teaches that the detector is positioned in multiple positions (18, 17, 15, 16), at greater distances from the optical member/ projection unit

Art Unit: 2881

(PU), in directions perpendicular to the optical axis (AX), than the stopping distance of the movable member/XY stage .

Regarding claim 26, Kayama et al. teaches that the exposure apparatus has a multiple detectors (18, 17, 16, 15), and, in response to detection results assigned to the multiple detectors, the controller instructs the movable member/XY stage to execute different movements [0057; 0077, 0159].

Regarding claim 27, Kayama et al. teaches that in response to the detected position of the movable member/XY stage (31) or of the substrate along the optical axis, the controller (20, 19, 24) instructs the movable member/XY stage to execute different movements [0057; 0077, 0159].

Regarding claim 28, Kayama et al. teaches that a measurement by the detector (17, 18, 20) reflects the movement status of the movable member/XY stage [0057; 0077, 0159].

Regarding claim 31, Kayama et al. teaches an exposure apparatus, in which the space between an optical member/ projection unit (figure 1; PU) which projects a pattern (R) onto object/wafer (W) placed on the image-plane side of the optical member/ projection unit is filled with a liquid [0027], and the pattern exposure is transferred through the liquid [0027]; wherein an opposing member/reticle stage (RST)

Art Unit: 2881

, positioned apart from the object/wafer in the direction the optical axis of the optical member/ projection unit (AX, PU), a driving device/reticle stage drive (11) [0043, 0045] to drive the opposing member/reticle stage and a controller(20) , when triggered, moves the object/wafer and the opposing member/reticle stage apart along the optical axis, wherein the opposing member/reticle stage is movable, relative to the optical member/ projection unit , in the optical axis direction [0043, 0045; 0149; 0159] .

Regarding claim 34, Kayama et al. teaches that the object/wafer is movable [0043, 0045; 0149; 0159] perpendicular to the optical axis (24) , and the controller (20) , when triggered, moves the object/wafer and the opposing member/reticle stage apart along the optical axis direction [0159].

Regarding claim 36, Kayama et al. teaches that the object/wafer is a substrate (W) for exposure to a pattern (R) or a movable member/XY stage (31) for supporting the substrate, and movable with at least three degrees of freedom [0159].

Regarding claim 38, Kayama et al. teaches that the controller, when triggered by an earthquake, moves the object/wafer and the opposing member/reticle stage apart along the optical axis direction [0159].

Art Unit: 2881

Regarding claims 16 and 39, Kayama et al. teaches a device manufacturing method, comprising a lithography process which uses an exposure apparatus (title, abstract).

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent prior art is closely related art that individually or in combination could be considered grounds for rejection. See references cited for a listing of the pertinent prior art found and the prior art found.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Smyth whose telephone number is 571-270-1746. The examiner can normally be reached on 7:30AM - 5:00PM; Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2881

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. S./

Examiner, Art Unit 2881

/David A Vanore/

Primary Examiner, Art Unit 2881